

IN THE SPECIFICATION:

Kindly amend the specification as follows. No new matter has been added to the specification.

Please replace the paragraph beginning on page 14, line 12, with the following new paragraph.

Fig. 1 is a view illustrating a configuration of a high speed circulation gas cooling furnace disclosed in the non-patent document 1;

Fig. 2 is a view illustrating a configuration in a method of promoting gas circulation and cooling disclosed in the patent document 1;

Fig. 3 is a view illustrating an entire configuration of a gas cooling type vacuum heat-treating furnace in an embodiment of the present invention;

[Fig. 4] is a Figs. 4A and 4B illustrate partly enlarged view views of Fig. 3;

Figs. 4A and 4B are collectively referred to herein as Fig. 4;

Fig. 5 is a sectional view along line A-A in Fig. 4;

Fig. 6 is a view illustrating an overall configuration of a vacuum heat treating furnace incorporated a cooling gas direction switching device in an embodiment of the present invention;

Fig. 7 is a partly enlarged view of Fig. 6;

Fig. 8 is a partly enlarged view illustrating a portion B in Fig. 7;

Figs. 9A and 9B are sectional views along line C-C in fig. 7;

Figs. 10A and 10B are sectional views, similar to Fig. 9, illustrating a cooling gas direction switching device in a second embodiment of the present invention.

Please replace the paragraph beginning on page 17, line 24, with the following new paragraph.

Fig. 4 is a partly enlarged view of Fig. 3, and Fig. 5 is a sectional view along line A-A in Fig. 4. As shown in Figs. 3 to 5, the gas cooling furnace 20 incorporates a vacuum vessel 21, a cooling chamber 22, a gas cooling and circulating device 21-24 and a gas direction switching device 26 and straighteners 28.

Please replace the paragraph beginning on page 20, line 10, with the following new paragraph.

The gas direction switching device 26, comprises, in this example, a hollow cowling 26a surrounding the heat-exchanger 25 with a space therebetween, and an elevating cylinder 27 for moving the cowling 26a up and down. The cowling 26a has a lower suction port 26b which is communicated with the lower part of the cooling chamber 22 at a downward position as shown in Fig. 4A and an upper suction port 26c which is communicated with the upper part of the cooling chamber 22 at an upward position as shown in Fig. 4B.

Please replace the paragraph beginning on page 20, line 19, with the following new paragraph.

With this configuration, the upper suction port 26b-26c and the lower suction port 26e 26b are alternately communicated with the suction side of the cooling fan 24a so as to alternately switching the directions of the gas flowing through the cooling chamber 22 in vertical directions, and accordingly, differences in flowing velocity among positions of the articles 1 to be heated which are arranged in order are decreased so as to restrain distortion of the articles 1 to be heat-treated in its entirety.

Please replace the paragraph beginning on page 25, line 7, with the following new paragraph.

Referring to Fig. 8 which is an enlarged view illustrating a part B in Fig. 7, the cooling gas direction switching device 40 is composed of a stationary partition plate [44]42, a rotary partition plate 44 and a rotary drive device 46.

Please replace the paragraph beginning on page 27, line 19, with the following new paragraph.

In the first embodiment shown in Figs. 9A and 9b, the cooling chamber 22 has a gas passage vertically piercing therethrough. When the gas flows downward in the cooling chamber 22, the suction opening 44a is communicated only with the lower part of the cooling chamber while the discharge opening 44a-44b is communicated only with the upper part of the cooling chamber, but when the gas flows upward, the suction opening 44a is communicated only with the upper part of the cooling chamber while the discharge opening 44b is communicated only with the lower part of the cooling chamber.